

US006050451A

United States Patent [19]

Hess, III et al.

[11] Patent Number:

6,050,451

[45] Date of Patent:

Apr. 18, 2000

[54]	DISPENSING STRUCTURE
	INCORPORATING A VALVE-CONTAINING
	FITMENT FOR MOUNTING TO A
	CONTAINER AND A PACKAGE WITH A
	DISPENSING STRUCTURE

[75] Inventors: John M. Hess, III; Stuart R. Brown, both of Midland; Joel R. Robinson, Bay City; Timothy R. Socier, Essexville, all of Mich.

[73] Assignee: AptarGroup, Inc., Crystal Lake, Ill.

[21] Appl. No.: 09/196,301

[22] Filed: Nov. 19, 1998

[56] References Cited

U.S. PATENT DOCUMENTS

1,989,714	2/1935	Statham .
1,996,156	4/1935	Janssen .
3,235,128	2/1966	Hansen 222/107
3,669,323	6/1972	Harker et al
4,553,971	11/1985	Ashley et al 222/107 X
4,629,080	12/1986	Carveth 222/107 X
4,640,425	2/1987	Cabernoch 222/107 X
4,728,006	3/1988	Drobish et al
4,732,299	3/1988	Hoyt 222/107 X
4,749,108	6/1988	Dornbusch et al.
4,794,750	1/1989	Schmidt et al
4,830,205	5/1989	Hammond et al 222/107 X
4,969,581	11/1990	Seifert et al
4,991,745	2/1991	Brown.
4,998,646	3/1991	Sherman 222/107
5,005,734	4/1991	Van Gordon et al 222/107
5,033,655	7/1991	Brown.
5,115,950	5/1992	Rohr.
5,213,236	5/1993	Brown et al
5,271,531	12/1993	Rohr et al
5,307,955	5/1994	Viegas .
		•

5,339,995	8/1994	Brown et al	
5,377,877		Brown et al	
5,409,144			
5,439,143	8/1995	Brown et al	
5,680,969	10/1997	Gross.	
5,873,491	2/1999	Garcia et al 222/	95
5,911,340	6/1999	Uematsu 222/	92

FOREIGN PATENT DOCUMENTS

160336	11/1985	European Pat. Off
297 06 158 U		_
1	4/1997	Germany.
297 06 159 U		·
1	4/1997	Germany .
1474620	5/1977	United Kingdom .
WO 96/38349	5/1996	WIPO.
WO 97/08979	3/1997	WIPO.

OTHER PUBLICATIONS

U.S. application No. 08/843,165, filed Apr. 14, 1997, which allowed on Sept. 22, 1998.

U.S. application No. 08/915,960 assigned to AptarGroup, Inc.

Primary Examiner—Kenneth Bomberg Attorney, Agent, or Firm—Rockey, Milnamow & Katz, Ltd.

57] ABSTRACT

A dispensing structure, and a package with a dispensing structure, is provided with a valve. In one embodiment, the dispensing structure is a multi-piece fitment. The multipiece fitment includes a base for mounting to the container and a valve carrier for mounting to the base. A flexible, self-sealing slit-type valve is mounted within the carrier. In another embodiment, a fitment is mounted in the opening of a thin-walled, flexible, collapsible container, and the flexible valve is mounted in the fitment. In yet another embodiment, a package includes a container having a corner wall defining an opening, and a fitment is sealingly mounted to the corner wall at the opening. A valve is disposed within the fitment. A removable and disposable cover extends from the container over the fitment and at least a portion of the corner wall to define a hermetically sealed volume around the fitment. The cover may be pulled away from the container to expose the fitment.

8 Claims, 8 Drawing Sheets

